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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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LAMARRE, GUY J

ART UNIT	PAPER NUMBER
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2133

21

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/282,851

Applicant(s)

PARK ET AL.

Examiner

Guy J. Lamarre, P.E.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 63, 64, 66, 67, 69, 72, 73, 75, 76, 78-80, 87, 88, 91, 97, 98 and 100-108 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 63, 64, 66, 67, 69, 72, 73, 75, 76, 78-80, 87-88, 91, 97, 98 and 100-108 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 16 September 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16, 19.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### FINAL OFFICE ACTION

0. This office action is in response to Applicants' **Amendment** of 01 March 2004.

Applicant's IDS of 8 Jan. 2004 has been entered. The Examiner has considered the IDS.

0.1 **Claims 63-64, 72, 75, 79, 87, 91 and 97** are amended. **Claims 63-64, 66-67, 69, 72-73, 75-76, 78-80, 87-88, 91, 97-98 and 100-108** remain pending.

0.2 The prior art rejections of record to **Claims 63-64, 66-67, 69, 72-73, 75-76, 78-80, 87-88, 91, 97-98 and 100-108**, as set forth in the office action of 11/26/2003, are maintained in response to Applicants' **Amendment** of 01 March 2004.

0.3 The objections of record to **Claims 64 and 91**, as set forth in the office action of 11/26/2003, are withdrawn in response to Applicants' amendment of 01 March 2004.

### Response to Arguments

1.0 Applicants' arguments of 01 March 2004 have been fully considered, but they are not persuasive.

### REMARKS

1.1 In response to **Claims 63, 72, 79 and 91**, Applicants argue, on page 7 para. 3 et seq., that the prior art of record does not teach processing means whereby the number and size of the subframes can be generated from the input data frame and separately turbo encoding each of such subframes.

**Examiner** disagrees as **Webster** clearly discloses processing means whereby the number and size of the subframes can be generated from the input data frame, in Fig. 3: block 73 and Fig. 4 and col. 7 line 55 et seq., and **Admitted prior art Fig. 1 block 14** clearly discloses turbo encoding of such frames or subframes,

**Examiner** notes that **Webster**, in col. 1 line 46 et seq., **discloses** that link level protocols group or partition or sub-divide original data to be transferred into plural frames wherein each

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frame comprises: portion of said original data, ECC, and control information. Thus, the passage teaches means to group or partition original data into frames for transfer through a channel along with all required hardware means to recover said original data that has been so partitioned into frames by combining or assembling or regrouping or congregating or concatenating said plural frames subsequent to removal of ECC and control information inserted therein prior to transmission. Said required hardware design means comprising data frame fitting means to appropriately process data frames, wherein such data fitting means is known to all transceivers or to both transmitter and receiver.

Therefore, the prior art of record renders obvious **Claims 63, 72, 79 and 91**.

**1.2** In response to **Claims 64, 87 and 97**, Applicants argue, on page 8 paras. 1-3, that the prior art of record does not teach interleaving means whereby the interleaving means is performed by a channel interleaver, or sub-frame concatenation means whereby encoded sub-frames are combined into frames.

**Examiner** disagrees as **MacNamee et al.** clearly discloses channel interleaver means in col. 2 line 62 and as **Webster** clearly discloses concatenation means as clarified previously and shown in **Webster** at col. 1 line 46 et seq.

Therefore, the prior art of record renders obvious **Claims 64, 87 and 97**.

**1.3** In response to **Claim 63**, Applicants further argue, on page 8 paras. 2 et seq., that the prior art of record does not teach original input data frame segmentation in order to maximize efficiency or for the purpose of maximizing turbo encoding efficiency.

**Examiner** disagrees and notes that the prior art does not have to disclose intended use or purpose. 'If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative

difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).”

**1.4** In response to **Claim 63**, Applicants allege, on page 8 para. 3, that the present invention analyses characteristics of the turbo encoder and adjusts input data frame sizes according to **characteristics of the turbo encoder** to maximize turbo encoding efficiency.

**Examiner** disagrees as this **turbo encoder characteristics** analysis is not incorporated into the claim language. Specifically, it is not seen where turbo encoder characteristics are recited in **Claim 63**. Rather, what is recited is input data frame. ‘Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).’

Therefore, the **Examiner** maintains that the prior art of record renders obvious **Claims 63, 72, 79, 91 and 97**.

**1.5** In response to **Claims 63, 66, 67, 69, 72, 75, 76, 78-80, 87, 88, 91, 98, 100-104 and 106-108**, Applicants further argue, on page 10 para. 1, that the prior art of record does not teach channel interleaver or the feature of channel coding or turbo encoding or variable frame length according to a predetermined condition.

**Examiner** disagrees and notes that the prior art does disclose the variable length frame feature via **Webster** in col. 1 line 46 et seq., channel interleaver feature via **MacNamee et al.** in col. 2 line 62, and channel coding or turbo encoding via Admitted prior art Figs. 1-2.

**1.6** In response to **Claims 64, 73, 102, and 105**, Applicants further argue, on page 10 para. 2, that the prior art of record does not teach the claimed multiplexing means.

**Examiner** disagrees and notes that the claimed multiplexing means is not recited in **Claims 64, 73 or 105**. Said claimed multiplexing means of **Claim 102** is disclosed in

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**MacNamee** et al. in Fig. 5, wherein is shown modulation/demodulation means in *Block 28* along with multiplexing/demultiplexing means *Blocks 28* and *34* as described in col. 5 line 9 et seq.

1.7 To the extent that the response to the applicant's arguments may have mentioned new portions of the prior art references which were not used in the prior office action, this does not constitute a new ground of rejection. It is clear that the prior art reference is of record and has been considered entirely by applicant. See *In re Boyer*, 363 F.2d 455, 458 n.2, 150 USPQ 441, 444, n.2 (CCPA 1966) and *In re Bush*, 296 F.2d 491, 496, 131 USPQ 263, 267 (CCPA 1961).

The mere fact that additional portions of the same reference may have been mentioned or relied upon does not constitute new ground of rejection. *In re Meinhardt*, 392, F.2d 273, 280, 157 USPQ 270, 275 (CCPA 1968).

**Examiner** thus maintains that **Claims 63-64, 66-67, 69, 72-73, 75-76, 78-80, 87-88, 91, 97-98 and 100-108** are unpatentable over the prior art of record.

### **Claim Rejections - 35 USC ' 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.0 This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2.1 **Claims 63, 64, 66, 67, 69, 72, 73, 75, 76, 78-80, 87-88, 91, 97, 98 and 100-108** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicants' Admitted prior art** (hereinafter **Admitted prior art**) in view of **Webster** (US Patent No. 5,307,351; 26 Apr. 1994).

**As per Claims 63, 66, 67, 69, 72, 75, 76, 78-80, 87-88, 91, 97, 98, 100-104 and 106-108**

**Admitted prior art** substantially discloses the procedure for the claimed mobile or base or remote communication system having a turbo encoder (Figs 1-2) having data frames of variable size comprising: means to send data or a processor for determining to concatenate a number of consecutive input data blocks to compose or assemble a data frame or plural subframes which can be generated from one input data frame or stream (page 3 line 9 et seq.); and a turbo encoder (page 1 last para.); a buffer for storing the consecutive input data blocks (dk); a first constituent encoder (Fig. 1 block 12) for receiving said composed data frame or plural subframes and encoding same which is composed of a number of input data blocks; an interleaver -or internal or external interleaving means - (Fig. 1 block 16) for interleaving the data of the super frame or a data frame or plural subframes; and a second constituent encoder (Fig. 1 block 14) for encoding the interleaved data of the super frame or a data frame or plural subframes; plural subframes being separately encoded. {See **Admitted prior art**, Figures 1-2, page 1 last para. - page 4 para. 2, in passim, wherein apparatus and method are described.} **Not specifically described** in detail in **Admitted prior art** is the step whereby means is provided for determining a number of input sub-frames or sub-blocks or sub-packets required to construct a frame or block or packet based on frame size or permissible delay or error rate.

**However** the approach of breaking or partitioning or segmenting or dividing a data super frame or frame or stream or sequence or block or packet into plural sub-frames or sub-blocks or sub-packets or sub-streams or sub-sequences and performing the reverse transformation thereon to recover the original data subsequent to intermediate processing is well known. For example, **Webster**, in an analogous art, discloses, in Fig. 3: block 73 and Fig. 4 and col. 7 line 55 et seq., hardware and an algorithm for dynamic data segmentation based on channel characteristics wherein such techniques are described based on transfer channel bit error rate or transfer media

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characteristics including means to initialize data communication via call setup, and means to assess memory size requirements prior to start of data communication. {See **Webster**, Id., Figs. 1-4 and associated description in, e.g., col. 2 line 30 et seq. For example, the passage at col. 1 line 46 et seq., teaches means to group original incoming data into frames for transfer through a channel along with all required hardware design means to recover said original incoming data so partitioned. Said required hardware design means comprising data frame fitting means to appropriately process data frames, etc., such data fitting means known to all transceivers or to both transmitter and receiver.} **Therefore**, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of the **Admitted prior art** by including therein dynamic or real time or on the fly width adjusting means based on transfer channel bit error rate or transfer media characteristics, as taught by **Webster**, because such modification would provide the procedure disclosed in the **Admitted prior art** with a technique whereby “*data transfer frame length is dynamically adjusted based on the quality of the transmission line or channel so as to improve data processing.*” {See **Webster**, Id., col. 2 line 40 et seq.}

As per **Claims 64, 73, 105**, **Admitted prior art** discloses the procedure for the claimed mobile communication system as claimed, wherein said interleaver or internal or channel interleaving means includes an interleaving address mapper for interleaving said frame or sub-frames. {See **Admitted prior art** Fig. 1: block 16 or Fig. 2: blocks 36, 32, 34 for interleaving or address mapper means and concatenation means}

**2.1.1 Claims 64, 73, 102, 105** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicants’ Admitted prior art** (hereinafter **Admitted prior art**) in view of **Webster** (US Patent No. 5,307,351; 26 Apr. 1994) in further view of **MacNamee et al.** (US Patent No. 5,212,684; May 18, 1993).



As per Claims 64, 73, 105, Admitted prior art and Webster substantially disclose the procedure for the claimed mobile or base or remote communication system having a turbo encoder (Figs 1-2) configured for processing variable size input data blocks. {See Admitted prior art, Figures 1-2, page 1 last para. - page 4 para. 2, in passim, wherein apparatus and method are described.} Not specifically described in detail in Admitted prior art or Webster is the step whereby means is provided for channel interleaving and multiplexing or modulation. However such approach is well known. For example, MacNamee et al., in an analogous art, discloses an information-processing algorithm wherein such techniques are described. {See MacNamee et al., Id., Fig. 5: blocks 22&34 (multiplexing), col. 2 line 25 et seq. (modulation means) and col. 2 line 62 (channel interleaving).} Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of the Admitted prior art and Webster by including therein channel interleaving and multiplexing means, as taught by MacNamee et al., because such modification would provide the procedure disclosed in the Admitted prior art and Webster with a technique whereby *channel interleaving pseudo-randomizes code symbols to provide symbol diversity for better burst error protection.* {See MacNamee et al., col. 2 line 62 et seq.}

As per Claim 102, MacNamee et al. discloses the procedure for the claimed multiplexing means, including means for latency or permissible delay (col. 2 lines 10-16), block size or memory size adjustment at col. 2 line 18 et seq.

### Claim Rejections - 35 USC § 112 SECOND PARAGRAPH

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**3.0 Claim 102** stands rejected under 35 USC § 112 SECOND PARAGRAPH for failing to particularly point out and distinctly define the subject matter which the applicant regards as his invention.

**As per Claim 102:** it is not clear to the Examiner what ‘respective outputs of the turbo encoder’ refers to. Since **Claim 63** has been amended to recite plural ‘encoded sub frames’ are output by the turbo encoder, it is not clear what is being multiplexed.

For example, assuming, for the sake of argument, that an encoded sub frame is output, and that a sub frame consists of a set of bits, said bits are exiting the turbo encoder in a serial manner, it is not clear to the Examiner how the multiplexing means is performed for ‘respective outputs of the turbo encoder.’ Examiner notes that Applicants’ Fig. 3: *Block 62* depicts a *MUX block* receiving plural sets of inputs, however the source encoder encoding output emanates from *Block 42*.

### Conclusion

**4.** Applicant's amendment necessitated the new ground(s) of rejection under 35 USC § 112 SECOND PARAGRAPH presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**4.1** Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks, Washington, D.C. 20231

**or faxed to:** (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Fourth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached on (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Guy J. Lamarre, P.E.  
Patent Examiner  
3/9/04

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